

Catalogue of American Amphibians and Reptiles.

IVERSON, JOHN B., AND RUSSELL A. MITTERMEIER. 1980. Dermatemyidae, *Dermatemys*.

Dermatemyidae River turtles

Dermatemyidae Gray 1870b:711. First use of name.
Dermatemyidae: Baur 1888a:421. Correct emendation.
Dermatemyidae: Alvarez del Toro 1972:15.

• CONTENT. Only the genus *Dermatemys* is extant. Approximately 19 fossil genera are recognized (see FOSSIL RECORD).

• DEFINITION (Based primarily on Romer, 1956, and Hay, 1908). Temporal region emarginate from behind, separating squamosal from parietal and postorbital; frontals enter orbital margin; maxilla does not meet quadratojugal; quadrate does not surround stapes; no foramen present in prootic for temporal artery. Dentary expanded posteriorly over much of external surface of jaw. Only one biconvex centrum in neck; eighth centrum doubly concave in front; tenth dorsal rib free of pleural, caudal vertebrae procoelous. Paired pubes and ischia meet ventrally, but pubic and ischiadic symphyses are widely separated. Trochanteric fossa of femur widely open. Plastron suturedly united to carapace. Entoplastron present. Neurals usually reduced in number, the costals meeting posteriorly.

• DESCRIPTIONS, DISTRIBUTION, PERTINENT LITERATURE AND ETYMOLOGY. See generic and specific account of *Dermatemys*.

• ILLUSTRATIONS. See generic and specific accounts of *Dermatemys*. Line drawings of many of the fossil forms are in Hay (1908). Additional drawings and photographs of fossil taxa accompany many of their original descriptions (see FOSSIL RECORD and references in Kuhn, 1964).

• FOSSIL RECORD. Dermatemyids date from the Cretaceous of North America, Europe, and East Asia. The following genera are presently included in the family (Kuhn, 1964), but some only provisionally: *Adocus* (Cope, 1868b; type species, *A. beatus* [Leidy 1865]); at least 13 species; Upper Cretaceous and Paleocene, of North America, and Eocene of East Asia; *Agomphus* (Cope, 1871; type species, *A. turgidus* [Cope 1869]; 8 species; Upper Cretaceous, North America); *Alamosemys* (Hay, 1908; type species, *A. subtriata* Hay 1908; 2 species; Paleocene, North America); *Baptemys* (Leidy, 1870; type species, *B. wyomingensis* Leidy 1870; 3 species; Eocene, North America); *Basilemys* (Hay, 1902; type species, *B. variolosa* [Cope 1876]; at least 5 species; Upper Cretaceous–Eocene, North America); *Compsemys* (Leidy, 1856; type species, *C. victas* Leidy 1856; at least 7 species; Upper Cretaceous–Paleocene, North America); *Heishanemys* (Bohlin, 1953; type species, *H. imperfectus* Bohlin 1953; monotypic; Cretaceous, East Asia); *Homorophus* (Cope, 1871; type species, *H. insuetus* Cope 1871; monotypic; Upper Cretaceous, North America); *Hoplochelys* (Hay, 1908; type species, *H. crassa* [Cope 1888]; 7 species; Paleocene–Eocene; North America); *Kallistira* (Hay, 1908; type species, *K. costilata* [Cope 1875]; monotypic; Eocene, North America); *Lindholmsemys* (Riabinin, 1935; type species, *L. elegans* Riabinin 1935; monotypic; Upper Cretaceous, Asia); *Notomorphus* (Cope, 1872; type species, *N. gravis* Cope 1872; monotypic; Eocene, North America); *Patanemys* (Andrews, 1920; type species, *P. bartonensis* Andrews 1920; monotypic; Eocene, Europe); *Peltochelys* (Dollo, 1884; type species, *P. duchastelii* Dollo 1884; monotypic; Lower Cretaceous, Europe); *Peishanemys* (Bohlin, 1953; type species, *P. latipons* Bohlin 1953; monotypic; Upper Cretaceous, East Asia); *Sinochelys* (Wiman, 1930; type species, *S. applanata* Wiman 1930; monotypic; Lower Cretaceous, East Asia); *Trachyaspis* (Meyer, 1843; type species, *T. lardyi* Meyer 1843; about 7 species; Eocene–Miocene, Europe and Africa); *Tretosternon* (Owen, 1842; type species, *T. bakewellii* [Mantell 1827]; about 3 species; Upper Jurassic–Lower Cretaceous, Europe); *Tsaotatemys* (Bohlin, 1953; type species, *T. rugosus* Bohlin 1953; monotypic; Cretaceous, East Asia); and *Zygoramma* (Cope, 1870; type species, *Z. striatula* Cope 1870; 2 species; Upper Cretaceous, North America).

Dermatemys Gray Central American river turtle

Dermatemys Gray, 1847:55. Type species, *Dermatemys mawii* by monotypy.

Chloremys Gray, 1870a:50. Substitute name.

Limnochelone Werner, 1901:298. Type species, *Limnochelone micrura* by monotypy.

• CONTENT. One species, *Dermatemys mawii*, is recognized.

• DEFINITION. A large (60 cm carapace length, 22 kg) aquatic turtle with a low, broad shell. The juvenile carapace has a single median keel which is usually lost with age. The large, unhinged plastron is composed of nine bones (including entoplastron) and connected to the carapace by a broad bridge. The hind lobe is emarginate. Three to six (typically four or five) inframarginals broadly separate the marginals from the 11 or 12 plastral scutes. The gular may be single or divided. Accessory interhumeral and interpectoral scutes are often present along the plastral midline. The anterior plastral buttresses are median and the posterior short, barely reaching the costals, if at all. The nuchal bone may lack lateral costiform processes. The posterior costals meet medially. Twelve pairs of marginals are present. Only the second cervical vertebra is biconvex; the eighth cervical centrum is doubly concave anteriorly. The frontal bone forms part of the orbit. The alveolar surface of the maxilla has denticulated longitudinal ridges; the labial ridge of the maxilla is strongly serrated. The prefrontals are long and slightly upturned. The jugal is short and the maxilla does not contact the quadratojugal. No chin barbels are present. The juvenile head is olive with an indistinct mustard-yellow orbital stripe; that of the adult is buff to cinnamon dorsally in males and darker olive in females. The unmarked carapace is uniform brown to dark olive; the plastron is uniform cream to light yellow. The unpatterned limbs are uniform dark gray. The feet are strongly webbed. The tail is much shorter than half carapace length.

• DESCRIPTIONS, ILLUSTRATIONS, DISTRIBUTION, FOSSIL RECORD, AND PERTINENT LITERATURE. See species account.

• ETYMOLOGY. The name is from the Greek *derma* (meaning skin) and *emys* (turtle), and refers to the skin-like appearance of the adult carapace due to obscurity of the seams separating the scutes. Gender is feminine.

Dermatemys mawii Gray Central American river turtle

Dermatemys mawii Gray, 1847:55. Type-locality, "South America" (in error), restricted to "Alvarado, Veracruz," Mexico by Smith and Taylor (1950:346). Holotype, British Mus. Natur. Hist. 1947.3.4.12, adult shell of unknown sex, collected by Lt. Mawe, R. N. (date unknown). Holotype not seen by authors. See COMMENT.

Emys Berardii Duméril and Bibron, in Duméril and Duméril 1851:11. Type-locality, "environs de Vera Cruz," Mexico. Syntypes, Mus. Nat. Hist. Natur. Paris 7835, adult female, collected by Lt. Mawe in "Amerique Meridionale" (date unknown), and 9518, adult male, collected by Captain Berard in the "eaux douces des environs de Vera Cruz," Mexico (date unknown). Syntypes not seen by authors.

Clemmys Berardii: Strauch, 1862:33.

Dermatemys Mawii: Strauch, 1862:34.

Emys mawii: Gray, 1864:126.

Dermatemys berrardi: Gray, 1864:126.

Dermatemys marvii: Müller, 1865:598.

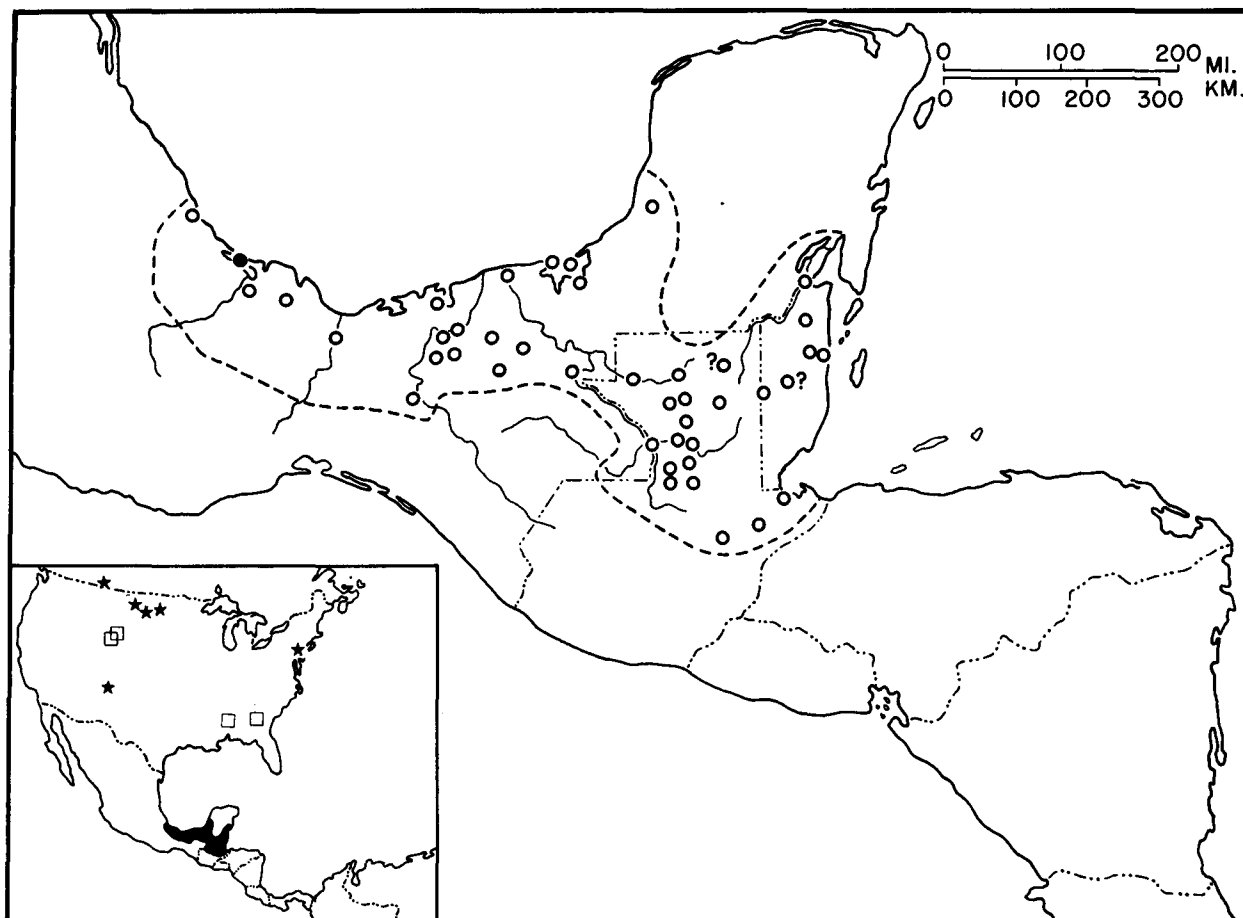
Dermatemys mavei: Cope, 1865:187.

Emys berardi: Cope, 1868a:119.

Dermatemys berardii: Cope, 1868a:120.

Dermatemys abnormis Cope, 1868a:120. Type-locality, "Belize River, Yucatan," restricted to "Belize" (city) by Smith and Taylor (1950:316). Holotype, Acad. Natur. Sci. Philadelphia 61 (see COMMENT), a juvenile, collected by Dr. D. B. Parsons (date unknown). Holotype not seen by authors.

Dermatemys Salvinii Gray, 1870a:50. Type-locality, "Guatemala." Holotype, British Mus. Natur. Hist. 1946.1.22.96, adult



MAP. Solid circle marks the type locality; open circles, other localities. North American fossil localities are mapped in inset: Cretaceous-Paleocene, stars; Eocene, squares. Some symbols represent more than one locality.

female, collected by O. Salvin (date unknown). Holotype not seen by authors.

Dermatemys Berardi: Gray, 1870a:50.

Chloremys abnormis: Gray, 1870a:50.

Dermatemys Mauri: Baur, 1888b:595.

Dermatemys mawii: Bienz, 1895:61.

Limnochelone micrura Werner, 1901:298. Type-locality, "Mexico," restricted to "Alvarado, Veracruz," Mexico, by Smith and Taylor (1950:346). Holotype presumably in the Konigsberg Zool. Museum, Kaliningrad, USSR, but unverified by the authors.

Dermatemys mawi: Gadow, 1901:341.

Dermatemys mawy: Herrera, 1904:5.

Dermatemys mawii: Beltran, 1953:130.

Dermatemys mawei: Neill and Allen, 1959:28.

- CONTENT. No subspecies have been described.

- DEFINITION. See generic account.

• DESCRIPTIONS. Adults are described in Siebenrock (1907), Boulenger (1889), and Alvarez del Toro (1972); the hatchling in Lee (1969); the egg, Holman (1963) and Alvarez del Toro (1972). Detailed anatomical descriptions include osteology (Baur, 1888b, 1888c, 1891, 1893; Bienz, 1895; Gaffney, 1979; McDowell, 1964), cervical vertebrae (Williams, 1950), arterial canals in ear-region (McDowell, 1961), head and neck musculature (Schumacher, 1973), choanal structure (Parsons, 1968), cloacal structure (Smith and James, 1958), eyes (Heinemann, 1877; Underwood, 1970), penis (Zug, 1966), musk glands (Waagen, 1972), and locomotor apparatus (Zug, 1971; Walker, 1973).

• ILLUSTRATIONS. Black and white photographs of adults are in Holman (1967), Pritchard (1967), Alvarez del Toro (1972), Mittermeier (1971), and Murphy (1973); those of juveniles in Lee

(1969); those of eggs in Holman (1963). Line drawings of adults are in Duméril (1852), Wermuth and Mertens (1961), Casas Andreu (1965, 1967); of the shell, in Gray (1870b, 1872), Bienz (1895), Hay (1908); of the skull, in McDowell (1964), Gaffney (1979), Guibé (1970); of the penis, in Zug (1966); and of the scleral ossicles, in Underwood (1970).

• DISTRIBUTION. *Dermatemys mawii* is found throughout the lowlands of the western Caribbean from central Veracruz, Mexico, eastward through northern Guatemala and Belize, but excluding the Yucatan Peninsula. Specimens U.S. Nat. Mus. 66666-66669 and 67732 from Tehuantepec, Oaxaca, are not believed to represent natural occurrence in that area and may have been transported there by vendors. The presence of *Dermatemys* in Honduras is unverified but is strongly suspected by Meyer and Wilson (1973).

• FOSSIL RECORD. Archaeological remains are known from Veracruz, Mexico (Wing, 1976); there is also a questionable record from Uaxuctun-Tikal, Guatemala (Stuart, 1934, 1958).

• PERTINENT LITERATURE. General accounts of the biology are in Casas Andreu (1967) and Alvarez del Toro (1972). Additional important references are: reproduction (Lee, 1969); tolerance of salt water (Neill, 1958; Allen and Neill, 1959); blood chemistry (Dessauer, 1970); serology (Frair, 1964, 1967, 1972); food (Ruthven, 1912); parasites (Caballero and Sokoloff, 1934; Caballero, 1940, 1942, 1943a, 1943b, 1961; Hughes et al., 1941, 1942; Yamaguti, 1958; Thatcher 1962, 1963, 1964); rostral pores (Winokur and Legler, 1974); longevity (Schmidt and Inger, 1957); habits in captivity (Lee, 1969; Pawley, 1969; Campbell, 1972); sale in markets (Mittermeier, 1970, 1971).

• ETYMOLOGY. The name *mawii* honors Lieutenant Mawe of the British Royal Navy, who collected the type specimen.

COMMENT

Despite the fact that the specific name is a patronym honoring Lt. Mawe, the exact original orthography (*mawii*) is here maintained.

Cope (1868a) lists the holotype of *Dermatemys abnormis* as U.S. Nat. Mus. 6545, but the specimen was subsequently re-deposited in the Academy of Natural Sciences, Philadelphia (ANSP 61; Malnate, 1971).

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